1 Distributions

1.1 Bernoulli

$f(x) = \theta^x(1-\theta)^{1-x}$
E[X] $= \theta$
VAR[X] $= \theta(1-\theta)$

1.2 Binomial

$f(x) = \binom{n}{k}\theta^k(1-\theta)^{n-k}$
E[X] $= n\theta$
VAR[X] $= n\theta(1-\theta)$

1.3 Poisson

$f(x) = \mathrm{e}^{-\lambda}\frac{\lambda^x}{x!}$
E[X] $= \lambda$
VAR[X] $= \lambda$

1.4 Exponential

$f(x) = \frac{1}{\lambda}\mathrm{e}^{\frac{-x}{\lambda}}$
F(x) $= 1 - \mathrm{e}^{\frac{-x}{\lambda}}$
E[X] $= \lambda$
VAR[X] $= \lambda^2$

1.5 Normal

$f(x) = \frac{1}{\sqrt{2\pi\sigma^2}}\mathrm{e}^{\frac{-(x-\mu)^2}{2\sigma^2}}$
E[X] $= \mu$
VAR[X] $= \sigma^2$

2 Hypothesis Testing